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Environmental Quality  
ENVIRONMENTAL COMPLIANCE  
GUIDANCE AND PROCEDURES

TABLE OF CONTENTS

	Paragraph	Page
CHAPTER 1 INTRODUCTION		
Purpose	1-1	1-1
Applicability	1-2	1-1
References	1-3	1-1
Glossary	1-4	1-3
CHAPTER 2 ENVIRONMENTAL COMPLIANCE COORDINATORS		
Reserved.		
CHAPTER 3 ENVIRONMENTAL COMPLIANCE ASSESSMENTS		
Reserved.		
CHAPTER 4 POLLUTION PREVENTION		
Purpose	4-1	4-1
Applicability	4-2	4-1
Background	4-3	4-1
Guidance	4-4	4-2
Additional Definitions	4-5	4-3
CHAPTER 5 OIL AND HAZARDOUS SUBSTANCES SPILLS		
Purpose	5-1	5-1
Applicability	5-2	5-1
Spill Plan Documents	5-3	5-1
CHAPTER 6 POLYCHLORINATED BIPHENYLS MANAGEMENT		
Purpose	6-1	6-1
Applicability	6-2	6-1

	Paragraph	Page
Guidance	6-3	6-1
Safety and Occupational Health	6-4	6-1
Records and Reporting	6-5	6-2
CHAPTER 7 OPERATING POTABLE WATER SYSTEMS AT USACE PROJECTS AND FACILITIES		
Reserved.		
CHAPTER 8 ENVIRONMENTAL COMPLIANCE TRAINING REQUIRED BY STATUTE AND IMPLEMENTING REGULATIONS		
Reserved.		
CHAPTER 9 FEDERAL FACILITY COMPLIANCE ACT (FFCA) OF 1992, FINES AND PENALTIES		
Reserved.		
CHAPTER 10 MANAGING OZONE DEPLETING SUBSTANCES AT USACE PROJECTS AND FACILITIES		
Purpose	10-1	10-1
Applicability	10-2	10-1
Guidance	10-3	10-1
Yearly Updates	10-4	10-4
Resourcing ODC Elimination	10-5	10-4
CHAPTER 11 ENVIRONMENTAL MANAGEMENT PROGRAM PLANNING (FED PLAN)		
Reserved.		
CHAPTER 12 THE FEDERAL AGENCY HAZARDOUS WASTE COMPLIANCE DOCKET		
Reserved.		
CHAPTER 13 - HAZARDOUS WASTE MANAGEMENT		
Purpose	13-1	13-1
Applicability	13-2	13-1
Guidance	13-3	13-1
Records and Reports	13-4	13-2
Good Management Practices	13-5	13-2
APPENDIX A REFERENCES		A-1
APPENDIX B SPILL AND EMERGENCY PLAN REVIEW PROCESS		B-1

Paragraph	Page
APPENDIX C RECOMMENDED ORGANIZATION OF A SPILL PREVENTION AND RESPONSE PLAN (SPRP)	C-1
APPENDIX D TRAINING REQUIREMENTS FOR SPILL RESPONSE	D-1
APPENDIX E 40 CFR, PART 110, DISCHARGE OF OIL	E-1
APPENDIX F 40 CFR, PART 355, EMERGENCY PLANNING AND NOTIFICATION	F-1

## CHAPTER 1 - INTRODUCTION

1-1. Purpose. This pamphlet establishes guidance for the management of environmental compliance-related operations and maintenance (O&M) activities at U.S. Army Corps of Engineers (USACE) civil works and military projects and facilities and supplements Engineer Regulation (ER) 200-2-3. The environmental compliance mission is to assure that all USACE facilities and associated lands (including outgrants) meet all applicable and appropriate environmental standards contained in relevant Federal, state and local laws and regulations. The environmental compliance mission is also related to environmental stewardship. Therefore, this pamphlet should be read in tandem with EP 1130-2-540, Environmental Stewardship Operations and Maintenance Guidance and Procedures. Environmental compliance categories include, but are not limited to:

- a. Air emissions management
- b. Cultural resources management
- c. Hazardous materials management
- d. Hazardous waste management
- e. Natural resources management
- f. Pesticides management
- g. Petroleum, oil, and lubricant management
- h. Solid waste management
- i. Storage tank management
- j. Toxic substances management
- k. Wastewater management

1-2. Applicability. This pamphlet applies to all USACE commands having responsibility for civil works functions and to military-funded projects and facilities.

1-3. References. See Appendix A.

1-4. Glossary.

a. Cleanup Operation. A non-emergency operation where hazardous substances or oil are removed, contained, incinerated, neutralized, stabilized, cleared up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment. A clean up operation may be a post-emergency spill response or may be a clean up action without being preceded by an emergency phase.

b. Commander/Director. The organizational leader, such as the District Commander, Laboratory Director, FOA Director, etc.

c. Discharge. Including, but not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping. "Discharge" shall not include any discharge authorized by a legal permit.

d. Emergency Spill Response. The response to a spill of oil or a hazardous substance that poses an immediate or potentially immediate threat to persons, property or the environment. The purpose of the response is to prevent the spill from entering or continuing to enter the environment. Once under control where the oil or substance is no longer an immediate threat to persons, property or the environment, the spill response becomes a non-emergency spill clean up.

e. Extremely Hazardous Substance. A substance listed as an "extremely hazardous substance" in Appendices A and B of 40 CFR Part 355.

f. First Responder. An emergency spill responder as defined in 29 CFR 1910.120(q) who works at either of the lowest two levels of response: First Responder, Awareness Level or First Responder, Operational Level.

g. Hazardous Material. Any material designated as a "hazardous material" pursuant to 49 CFR 172. All hazardous materials are hazardous substances, except oil.

h. Hazardous Materials Technician or Specialist. An emergency spill responder as defined in 29 CFR 1910.120(q) who has at least 24 hours of specialized training and works at the third or fourth highest levels (of five levels): Hazardous Materials Technician (third highest level) or Hazardous Materials Specialist (second highest level.) For further definition, see Chapters 4 and 5.

i. Hazardous Materials Response Team (or HazMat Team). An organized group of responders who handle or control spills of oil or hazardous substances requiring possible close approach to the substance. The purpose of their response is to control and stabilize the incident. Note: First Responders are not part of the HazMat team.

j. Hazardous Substance. Any substance designated as a "hazardous substance" pursuant to 40 CFR Part 302. For the purposes of this guidance, references to "hazardous substance" include any hazardous chemical and extremely hazardous substance.

k. Hazardous Waste. Any waste designated as a "hazardous waste" pursuant to 40 CFR 260-261. All hazardous wastes are hazardous materials, and therefore hazardous substances.

l. Hazardous Waste Site Worker. A non-emergency worker at a hazardous waste clean up site as defined in 29 CFR 1910.120(e) who usually has at least 40 hours of specialized training to work at hazardous waste clean-up sites.

m. Incident Command System (ICS). A formal system a HazMat team uses to manage the site of an emergency spill response. The system typically includes a designated incident commander, safety officer, and a logistics officer. (Note: For small scale emergency spill responses, these duties may all be performed by the same one or two individual(s).)

- n. Incident Commander. See "On Scene Commander."
- o. Oil. Oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse and oil mixed with waste other than dredged disposal material.
- p. On Scene Commander. An emergency spill responder as defined in 29 CFR 1910.120(q) who has at least 6 hours of specialized training in incident Responder, Awareness Level (lowest level) or First Responder, Operations Level (second lowest level) and who is designated to control and coordinate an emergency spill response at the scene of an oil or hazardous substance spill, the highest of five levels of emergency spill response. For further definition, see Appendix 5-C.
- q. Release. Any spilling, leaking, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous chemical, extremely hazardous substance, or CERCLA hazardous substances.
- r. Reportable Quantity. The quantity of a spilled hazardous substance specified in 40 CFR 302 at which the facility spilling that substance becomes subject to certain notification requirements.
- s. Spill. The accidental or the deliberate but unpermitted discharge or release of reportable quantities of oil or a hazardous substance.
- t. Spill Contingency Plan. A plan required for some non-transportation-related facilities that outlines specific operational and administrative procedures that can be used by facility personnel to respond to an accidental spill of oil or a hazardous substance. Spill contingency plans must comply with standards established in 40 CFR 112.7.
- u. Spill Plan. Usually a Spill Prevention, Control, and Countermeasure Plan, often containing a Spill Contingency Plan. Some spill plans will also meet requirements for the facility's Emergency Response Plan (set forth in 29 CFR 1910.120) and/or for its Emergency Action Plan (set forth in 29 CFR 1910.38).
- v. Spill Prevention, Control and Countermeasure Plan. A plan required at some non-transportation-related facilities pursuant to 40 CFR 112 that should describe what actions the facility will take to prevent a discharge or release of oil or a hazardous substance from reaching navigable waters. For more detail, see Chapter 5.
- w. Spill Prevention and Response Plan. A plan that combines several required planning documents into a single organized document, including (1) the Spill Prevention, Control and Countermeasure Plan, (2) the Spill Contingency Plan, (3) the Emergency Response Plan, and (4) the Emergency Action Plan.
- x. Spill Response. A response to a spill of oil or a hazardous substance. A "spill response" could include an Emergency Spill Response and/or a Cleanup Operation.
- y. Spill Response Team. A team of trained, equipped spill responders that may be formed from USACE personnel, contractor personnel, MOA partner personnel, or any combination of these groups, to provide emergency spill response for a facility. Spill response teams may include First Responders.

z. USACE Operated Facility. Those facilities operated using USACE personnel, and those facilities operated by USACE contractors where the USACE has active, directive control and management of the facility. USACE operated facilities include structures such as buildings, dams, powerplants, locks, and pipelines, as well as public lands and waters. Conversely, non-USACE operated facilities are facilities operated by a non-USACE entity where an appropriate outgrant, such as leased areas, where USACE personnel and/or USACE contractors do not have active direct control and management of the facility.

aa. Vessel Response Plan. A shipboard oil spill emergency plan that outlines specific operational and administrative procedures that can be used by the vessel's crew to minimize the release and effects of an accidental oil spill. Vessel Response Plans must comply with the requirements of the international pollution prevention agreement, MARPOL 73/78 and 33 CFR Part 155, including the Oil Pollution Act-90 (OPA-90) amendments.

ab. Emergency Action Plan. A written plan developed for a workplace, or parts thereof, in accordance with 29 CFR 1910.38(a) which covers those designated actions employers and employees must take to ensure employee safety from fire and other emergencies. The plan includes a minimum of 6 specific elements described in the regulation.

ac. Emergency Response Plan. A written plan developed and implemented in accordance with 29 CFR 1910.120(q)(1)&(2) to handle anticipated emergencies prior to the commencement of emergency response operations. The plan describes an employer's strategy for providing for a response to an emergency when one or more employees is/are allowed or required to respond to that emergency. It includes a minimum of 12 specific elements described in the regulation.

## CHAPTER 2 - ENVIRONMENTAL COMPLIANCE COORDINATORS

Reserved.



## CHAPTER 3 - ENVIRONMENTAL COMPLIANCE ASSESSMENTS

Reserved.

## CHAPTER 4 - POLLUTION PREVENTION

4-1. Purpose. This chapter establishes guidance for implementing the USACE Pollution Prevention Program for Civil Works functions.

4-2. Applicability. This chapter applies to all USACE commands having responsibility for civil works functions, and to military-funded USACE facilities.

4-3. Background.

a. Federal legislation was passed in 1986, prompted by accidental industrial releases of toxic chemicals which, in one case in Bhopal, India, killed and injured hundreds of people in the area immediately surrounding the facility. The legislation provided for Emergency Planning between industry and state and local governments to protect public health and safety and the environment, and to coordinate a national chemical emergency planning system. Additional purposes of the legislation included the: increased awareness of chemical hazards; support and focus of state and local planning activities; and support of chemical accident and pollution prevention initiatives. Commonly called "EPCRA", the Emergency Planning and Community Right-to-Know Act of 1986 requires industry to report certain chemicals and materials, and to establish and maintain a relationship with communities potentially affected by their facilities.

b. Executive Order 12856 extends the requirements of EPCRA to Federal facilities and requires the establishment of Pollution Prevention Programs at each Federal agency, and completion of pollution prevention plans at the facility level. The U.S. Environmental Protection Agency (EPA) oversees the Pollution Prevention Program of Federal agencies through guidance, training, technical assistance, and reporting of progress and status.

c. The EPCRA, Executive Order 12856, and several other environmentally related Executive Orders, have resulted in a pollution prevention program within the Departments of Defense and of the Army and in the U.S. Army Corps of Engineers (USACE). Since 1992 Prevention has been one of the four pillars in the U.S. Army Environmental Strategy into the 21st Century, along with compliance, restoration, and conservation. Pollution prevention, through "source reduction" has been a guiding principle of the Pollution Prevention Act since 1990. With Executive Order 12856 in September of 1993, a formal Federal agency-wide program has been formulated and USACE is committed to be a leader in pollution prevention.

d. Pollution prevention is the use of materials, processes, or practices which reduce or eliminate pollution at its source. It focuses on eliminating discharges of hazardous or toxic chemicals to the environment and protects natural resources through conservation and improved efficiency. Pollution prevention also reduces the use of hazardous materials, energy, and water. This is a "multi-media" approach to improving the environment and in operating our facilities more efficiently by managing all environmental media; air, land, and water, together.

e. Preventing pollution, through source reduction, is the first step in protecting the environment. Other steps, in descending order, are recycling, treatment, and disposal in an environmentally acceptable manner. A successful pollution prevention program can reduce costs, increase efficiency, improve the quality of our service to the Nation, foster a healthy and safe facility for our visitors and employees, and improve the environment.

4-4. Guidance.

a. Each USACE organization, from the Headquarters to the project or facility level, must develop a Pollution Prevention Program. Pollution prevention is everyone's responsibility; from the commander to each team member.

b. Major products of the Pollution Prevention Program include: pollution prevention opportunity assessments, pollution prevention plans, pollution prevention measures, and reports.

(1) Pollution prevention opportunity assessments are performed at each project and facility or whenever practicable, pollution prevention opportunity assessments developed for similar projects or facilities are adapted. The purpose of the assessment is to develop, update and implement the pollution prevention program. The assessment characterizes operations at the project or facility, provides an inventory of previous and on-going initiatives, quantifies usages, releases and wastes, develops opportunities for reducing usage, releases, and wastes, and analyzes the technical, environmental and economic feasibility of selected opportunities.

(2) Pollution prevention plans combine the results of the opportunity assessments in a logical plan for implementing cost-effective projects and activities that will prevent pollution at the facility. Opportunities and processes identified in the assessments and plans must be evaluated, rated, and set in place on the basis of their life-cycle costs and value added to the facility. Most pollution prevention plans will contain significant information on how findings are to be implemented. Projects and facilities may be combined or grouped into a single pollution prevention plan. Groupings may be on the basis of pollutant type, operational purposes or features, administrative or management units, or geographic affinity (e.g. area, region, watershed, state, district). Districts should obtain concurrence of the Major Subordinate Command before committing to groups or combinations. For reasons of schedule and funding, details of implementation for some plans, may be developed after pollution prevention plans have been completed. Pollution prevention plans, either an individual or a group plan, must be maintained at the site and must be made available at the request of the public and the regulatory community.

(3) Once approved and resourced, the activity, contract, modification, or whatever form the pollution prevention implementation takes becomes a measure. Pollution prevention measures may include modifying a painting process, or eliminating painting at the site and contracting it out. Another example may be changing underground fuel storage tanks to above ground storage tanks of smaller volume.

(4) Reporting may be required by higher authority to meet Department of Defense and Department of the Army report requirements, or as a measure of USACE performance in preventing pollution. EPA may conduct data calls and require periodic reports direct from each facility.

c. Establishing a baseline and measuring success. Pollution prevention program effectiveness is determined by comparing benefits and improvements against an established facility baseline.

(1) The baseline is a comprehensive picture of the materials usage patterns and environmental impacts resulting from the operation of the facility. The baseline can best be generated by the operating staff, although outside assistance can often be helpful as a new

perspective on how and why things are done the way they are. Each waste generating operation, including; purchasing and handling of raw materials and other incoming products, and location and processes of where they are being used, must be assessed and quantified as distinctly as possible. The baseline must show: what wastes and pollutants are being generated; what processes are generating these wastes and pollutants; and what volumes and characteristics of the wastes are being generated.

(2) The baseline often takes the form of a matrix comparing the before and after conditions. The matrix may list the process, or waste stream, or material use for a baseline year, and compare it against the changes effected due to pollution prevention measures. Executive Order 12856 requires a baseline year no later than 1994, i.e. the matrix would show the project condition in 1994. It may be advantageous to make the baseline condition earlier if project or facility advancements prior to 1994 should be credited to pollution prevention.

(3) EPCRA and Department of Defense focus is on toxic chemicals. Toxic chemicals must be included in the baseline. The typical USACE facility will be addressing more environmentally benign conditions than originally envisioned by EPCRA and Department of Defense. This is in part due to the non-industrial nature of USACE projects and facilities, and because of good environmental stewardship and sound practices that are ingrained in USACE environmental management. The Department of the Army has agreed that USACE does not have the toxic chemical inventories upon which EPCRA and agency goals are predicated. Consequently, USACE will not be contributors to the Department of Defense goal of 50 percent of Toxic Release Inventory reductions.

(4) This makes the establishment of a reasonable baseline, and quantifying improvements in preventing pollution, more subjective for USACE than for other Department of Defense facilities. It is equally important for USACE, as committed leaders in pollution prevention, to develop baselines that include any source of pollution at the project or facility. It is also important that the source reduction of pollution at the project or facility be quantified in a realistic way to demonstrate the effectiveness of its pollution prevention program.

4-5. Additional Definitions. A number of terms are used in policy and guidance documents that require further amplification. Following are some of the more commonly used terms: most require reference to lists or explanations contained in other sources such as EPCRA. In all cases our use of terms in USACE is intended to agree with their uses and definitions by EPA and in Executive Order 12856 and in EPCRA.

a. Extremely Hazardous Substances. Refer to EPCRA sections 301 to 303. See 40 CFR 355, Appendixes A & B: both list the same chemicals, in alphabetical order and by the Chemical Abstract Service (CAS) number.

b. Extremely Hazardous Substances and CERCLA Hazardous Substances. Refer to EPCRA section 304. See 40 CFR 355 and 302.4.

c. Hazardous Chemical Inventory. Refer to EPCRA section 311 and 40 CFR 370.21. Also refer to EPCRA section 312 and 40 CFR 370.25. Covers the OSHA Hazardous Chemicals (no specific list). Material Safety Data Sheets are required for OSHA Hazardous Chemicals. If a Material Safety Data Sheet is not required for a material, it is not subject to EPCRA sections 311 and 312.

d. Toxic Chemical Release. EPCRA section 313 and 40 CFR 372. These are the Form “R” Reportable chemicals.

e. Toxic Chemical. A substance on the list described in EPCRA, section 313 (c) and found in 40 CFR 372.65.

f. Toxic Pollutant. The term includes, but is not limited to, those chemicals subject to the provisions of EPCRA, section 313, as of December 1, 1993. It does not include hazardous waste subject to remedial action generated prior to the date of Executive Order 12856, 3 August 1993. These wastes cannot be affected by “source reduction” and should not be factored into the baseline for measuring progress in pollution prevention.

g. Additions to Toxic Pollutants. Federal agencies may choose to include releases and transfers of other chemicals, such as “extremely hazardous chemicals” as defined in section 329(3) of EPCRA, hazardous wastes as defined under Resource Conservation and Recovery Act of 1976, or hazardous air pollutants under the Clean Air Act Amendments; however, for the purposes of establishing the baseline, these are additions to the EPCRA section 313 chemicals (not instead of).

## CHAPTER 5 - OIL AND HAZARDOUS SUBSTANCES SPILLS

5-1. Purpose. This chapter establishes guidance for developing spill plan documents for spills involving USACE or USACE contractor operations on USACE owned or leased land.

5-2. Applicability.

a. This guidance applies to USACE commands having responsibility for civil works-funded facilities and activities, including floating plant. USACE military-funded facilities and activities are subject to guidance provided in AR 200-1, Environmental Protection and Enhancement. Hazardous, Toxic and Radioactive Waste (HTRW) program activities and projects are subject to guidance provided in CEMP-RT memorandum, 20 Jul 95, subject: Spill Reporting Procedures for USACE Personnel Involved in HTRW Projects.

b. The term "Commander/Director" is used to refer to the organizational leader, such as the District Commander, Laboratory Director, FOA Director, etc.

5-3. Spill Plan Documents.

a. For vessels, Vessel Response Plan guidance was distributed in CECW-OD memorandum dated 24 May 93, subject: Shipboard Oil Spill Emergency Plans. Guidance for onshore facilities is provided below.

b. HQUSACE recommends using a single spill plan document format to meet all the requirements specified in various regulations for the Spill Prevention, Control and Countermeasure Plan; the Spill Contingency Plan; the Emergency Response Plan; and the Emergency Action Plan. Appendix B, Spill and Emergency Plan Review Process, provides guidance on determining which, if any, of these four related plans might be required. Guidance on developing plans is in Appendix C, Recommended Organization of a Spill Prevention and Response Plan (SPRP).

c. USACE facility spill plans will identify potential spill site locations, specific measures to be taken in case of a spill from those facilities or activities, and what level of emergency spill response is expected from USACE personnel to provide that response. The plan will also specify at what emergency spill response level USACE personnel at that location will be trained, and the Commander/Director will assure that USACE personnel are not responding at levels beyond their qualifications or authorization. (See Appendix D, Training Requirements for Spill Response.)

d. Responsibility to assure that USACE facility spill plans are promptly developed and adequately meet requirements rests with the functional element responsible for the operation of the facility. In many cases, this will be the Operations element, but in some cases it may be Engineering, Construction Logistics or Emergency Management. The functional element may write the spill plan itself or may enlist the aid of other Corps elements, other agencies or contractors to obtain an effective plan. No matter who actually develops the plan, involvement of facility personnel is important.

## CHAPTER 6 - POLYCHLORINATED BIPHENYLS MANAGEMENT

6-1. Purpose. This chapter establishes guidance for the continued use and disposal of Polychlorinated Biphenyls (PCBs).

6-2. Applicability. This chapter applies to all USACE commands having responsibility for civil works functions, including floating plant. USACE military-funded facilities shall adopt the PCB management guidance in AR 200-1 Environmental Protection and Enhancement, in coordination with CECW-OA.

6-3. Guidance.

a. Regulations which involve the use, handling and disposal of PCB material are summarized in the Army Environmental Hygiene Agency, Environmental Quality Information Paper #18, "Regulations Concerning Polychlorinated Biphenyls," dated 14 Jan 91. (See Environmental Compliance Coordinators for current copy.) Consult the latest edition of 40 CFR, Part 761 for current regulatory requirements.

b. The Operations Project Manager (or facility manager if outside a project) will sign the annual report required by 40 CFR 761.180 by 1 July each year.

6-4. Safety and Occupational Health.

a. Hazard communication training shall be provided to ensure employees fully understand the hazard and effects of exposure to PCBs. Common sense actions that are important to stress when working with PCB containing materials are described on PCB product Material Safety Data Sheets. Data sheets should be reviewed prior to conducting PCB related work activities.

b. Exposure assessment and monitoring will be used to determine airborne concentrations of contaminants, select barriers to exposure and aid in selecting proper personal protective equipment.

c. Medical surveillance will provide a biological and physiological basis for determining if individuals can perform their job while wearing personal protective equipment such as respirators, providing baseline biological indices and aiding in determining whether PCBs have been taken into the body and if there have been any adverse affects.

(1) Employees with potential exposure to PCB must be given appropriate medical examinations. At a minimum, these will include a medical history and physical examination emphasizing liver function and skin condition. The liver function tests must include serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT) and gamma glutamyl transpeptidase (GGTP) determinations.

(2) If respiratory protection is used, affected employees must be determined to be physically able to perform work using that equipment annually.

EP 200-2-3  
30 Oct 96

6-5. Records and Reporting.

a. Annual reports, analytical data, inventories, manifests, storage and disposition records, release reports, and other PCB related records will be consolidated and retained at projects (or facilities).

b. Accurate records of employees' exposure to PCB material on the job shall be maintained. Employee exposure and medical records are to be retained for at least 40 years after termination of employment.



## CHAPTER 7 - OPERATING POTABLE WATER SYSTEMS AT USACE PROJECTS AND FACILITIES

Reserved.

## CHAPTER 8 - ENVIRONMENTAL COMPLIANCE TRAINING REQUIRED BY STATUTE AND IMPLEMENTING REGULATIONS

Reserved.

CHAPTER 9 - FEDERAL FACILITY COMPLIANCE ACT (FFCA) OF 1992, FINES AND  
PENALTIES

Reserved.

## CHAPTER 10 - MANAGING OZONE DEPLETING SUBSTANCES (ODS) AT USACE PROJECTS AND FACILITIES

10-1. Purpose. This chapter establishes guidance for managing ODSs at USACE projects and facilities.

10-2. Applicability. This chapter applies to all USACE commands having responsibility for civil works funded activities, including floating plant. USACE research and development laboratories and other facilities that are wholly or substantially military funded but not located on military installations shall adapt the ozone-depleting substance guidance in AR 200-1, Environmental Protection and Enhancement, in coordination with CECW-OA. USACE facilities located on Army installations will comply with the installation commanders' ozone-depleting substance elimination program requirements.

10-3. Guidance.

a. Executive Order 12843 established a policy of the Federal government to implement cost-effective programs to minimize procurement of materials and substances that contribute to the depletion of stratospheric ozone and give preference to the procurement of alternative chemicals, products and manufacturing processes that reduce overall risks to human health and the environment by lessening the depletion of ozone in the upper atmosphere.

b. The Army's objective is to end dependence on ODS use in equipment and processes so that the pending phaseout of Class I ODSs causes minimal impact on Army missions. Although the Class I phaseout applies to chemical production and import only, and does not apply to their use, EO 12843 and Army policy do. Class I Substances list can be found in 40 CFR Part 82, Appendix A.

c. The key to efficiently eliminating ODSs from USACE projects and facilities is developing and implementing comprehensive ODS elimination plans. Operations project managers or facility managers should develop and execute ODS elimination plans addressing applicable facilities and equipment. Advance planning for phaseout of ODSs will minimize impact on individual projects and facilities. The following paragraphs describe the steps involved in ODS elimination planning.

### (1) Step 1: Assign an ODS Elimination Coordinator

(a) It is recommended that MSC commanders and District commanders designate an ODS coordinator in the Operations element since most of the affected facilities and equipment are at operating projects. Laboratories and FOAs should also designate ODS coordinators. The intent is to provide senior leadership with a responsible individual to monitor execution of ODS elimination efforts throughout the division, district, laboratory, FOA, etc.

(b) ODS coordinators should be knowledgeable of USACE policies, and Federal, state and local regulations concerning ODSs, and familiar with the operations and maintenance of projects and facilities, especially those having refrigeration, air conditioning, and fire suppression systems. The ODS coordinator should also be familiar with the planning, programming and budgeting processes.

(c) It is further recommended that operations project managers and facility managers appoint an individual to oversee and coordinate their ODS elimination efforts.

(2) Step 2: Inventory ODS Equipment and Supplies

(a) The first task is to assemble an accurate inventory of all equipment which uses ODSs and an inventory of all ODS supplies on hand. The equipment inventory should include air conditioning, refrigeration and fire fighting systems, and all other ODS applications. These inventories will serve as the baseline for ODS elimination planning. The following information should be gathered as part of the equipment inventory process:

- Location of equipment - area, building, and room
- Ownership - determine if equipment is project, PRIP, logistics or personal property
- Equipment type - manufacturer, model, and serial number of affected components
- Chemical used - identify the ODS used and amount of chemical contained in the system
- Operating record - include the date of installation and operating conditions of the system which apply primarily to air conditioning and refrigeration units
- Maintenance record - include scheduled maintenance actions, emergency repairs, leaks, major overhauls and chemical recharges. The history of chemical requisition may be useful to supplement maintenance records
- Future Plans - such as upcoming scheduled maintenance, building renovation, demolition plans or facility realignment

(b) The information collected should include project and facility supplies and at least the following information:

- Chemical type - chemical name, new or recycled product (for quality control)
- Storage location - building location and ownership
- Allocation - chemical dedicated for a specific use
- Amount - total chemicals at that location, volume, weight, number of containers

(c) The equipment and chemical stock inventories should be prepared in a format that can be updated over the course of the ODS elimination program. Periodic inventories are required.

(3) Step 3: Conservation Measures

(a) The next phase of the ODS elimination planning is establishing maintenance processes aimed at conserving and recovering ODS chemicals. Conservation measures, such as leak prevention, will be a major priority of the on-going maintenance. By preventing leaks, the

project or facility will have to procure fewer ODSs to replenish systems and will have a larger recoverable supply for reuse. For refrigeration and fire fighting systems, periodic checks using a specialized chlorine detector may be preferable. For air conditioning systems, especially those in detached mechanical rooms, a fixed detector may provide better protection against leaks. Fixed fire suppression systems can be checked by monitoring cylinder pressure gauges. If leakage does occur, the systems must be repaired immediately. Without a detection system, leakage might progress to the point of reduced operating efficiency.

(b) Another conservation measure that can be implemented is the installation of high efficiency purge units on centrifugal air conditioning systems. The high efficiency purges prevent the venting of Chlorofluorocarbons (CFCs) during normal operation. These purges are a low cost method to conserve refrigerant and may be considered for equipment not immediately scheduled for retrofit or replacement.

#### (4) Step 4: ODS Recovery and Reuse

(a) After establishing accurate inventories, the operations project manager or facility manager should then do an analysis or evaluation of each ODS application. Based on these evaluations, decisions can be made regarding how to deal with each ODS being used.

(b) Halons installed in power distribution systems, computer facilities and other electronic systems should be recovered. CFCs should also be recovered from project or facility systems when retrofit or replacement occurs. CFCs recovered from projects or facilities may be reused at the same project or facility. CFCs should also be recovered, reclaimed and reused if the project or facility determines the expense of recovery and reclaiming equipment to be worthwhile as an interim alternative to disposing used ODS solvents.

#### (5) Step 5: Building the Elimination Plan

(a) With the information gathered from steps 1 through 4, operations project managers or facility managers can build ODS elimination plans. The schedule for retrofitting or replacing equipment should be based on a priority assessment.

(b) Retrofit refers to the modification of existing equipment so it can operate effectively with an alternative chemical. Recovery of the Class I ODS chemical and recharging the system with the replacement chemical is only part of the retrofit action. Frequently, additional system components should be replaced during retrofit actions. For example, fire fighting system nozzles and air conditioner lubricant should be compatible with the new chemicals used. The complexity and cost of these modifications should be evaluated when deciding between retrofit and replacement options.

(c) Replacement is the complete removal of an existing ODS dependent system and installation of a new system that uses an environmentally acceptable alternative chemical. In some cases, ODS containing equipment may no longer be needed and can be eliminated using approved disposal procedures. Only hermetically sealed ODS systems, such as water coolers and refrigerators, which require no ODS additions during maintenance, will be allowed to continue operating indefinitely and eventually be replaced through normal attrition and eliminated using approved disposal procedures.

(d) Decisions on whether to retrofit or replace hardware will be based on factors such as cost, condition, age, performance, and safety. Based on the information gathered during the inventory, the project or facility manager can determine which systems are in need of immediate attention, and which will be efficient and useful for a longer period. Those systems judged to be high priority for major maintenance should be retrofitted or replaced before those systems which are operating well. Listed below are some factors to consider when prioritizing and scheduling retrofits and replacements.

High Priority System Indicators:

- Frequent recharges, leaking components
- Obsolete, inefficient equipment
- Equipment near end of life in hours use or age
- Frequent maintenance and repair required
- Building modernization scheduled

Low priority system indicators:

- Recent Installation
- Low maintenance, infrequent repair required
- CFC-13 refrigerant (no option available)
- System resistant to retrofit

10-4. Yearly Updates. Operations Project Managers and facility managers should update their ODS elimination plans in advance of each annual budget cycle to reflect projected costs, plus justification for necessary resources, and provide input to the budget process. The updated yearly plan should reflect both accomplishments and unfinished requirements for eliminating ODSs.

10-5. Resourcing ODS Elimination. There is no special funding for ODS elimination. ODS elimination requirements should be included in the applicable budgeting process. Using the methodology described in this guidance, project and facility plans can be developed to totally eliminate Class I ODSs.

## CHAPTER 11 - ENVIRONMENTAL MANAGEMENT PROGRAM PLANNING (FED PLAN)

Reserved.



## CHAPTER 12 - THE FEDERAL AGENCY HAZARDOUS WASTE COMPLIANCE DOCKET

Reserved.

## CHAPTER 13 - HAZARDOUS WASTE MANAGEMENT

13-1. Purpose. This chapter establishes guidance on the management, generation, storage, transportation, treatment and disposal of hazardous wastes.

13-2. Applicability. This chapter applies to all USACE commands having responsibility for civil works functions, including floating plant.

13-3. Guidance. The majority of USACE facilities are federally regulated as small quantity generators (SQG) or Conditionally Exempt Small Quantity Generators (CESQG). In determining generator status, facilities should be aware that large scale maintenance operations (e.g., lead-based paint removal at a power plant) can generate sufficient hazardous wastes to change the generator status of their facility for the duration of the project, and potentially for that year depending on state regulations.

a. In general, USACE facilities that are federally regulated as CESQGs shall:

(1) Ensure that state requirements are no more stringent than the Federal requirements when determining generator status.

(2) Document the determination that the facility is indeed conditionally exempt. The decision should be redocumented each year.

(3) Manage wastes as required by 40 CFR 261.5 or applicable state regulation.

(4) Comply with all Department of Transportation (DOT) requirements when shipping wastes offsite.

b. In general USACE facilities that are federally regulated as SQGs shall:

(1) Ensure that state requirements are no more stringent than the Federal requirements when determining generator status.

(2) Document the determination that the facility indeed holds SQG status. This decision should be redocumented each year.

(3) Manage wastes as required by 40 CFR 262.34 (c) through (f) or applicable state regulation.

(4) Designate an Emergency Coordinator as required in 40 CFR 262.34(d)(5)(ii) for hazardous wastes as well as the preparedness and emergency information required by regulation.

(5) Comply with all DOT requirements when shipping wastes offsite.

c. In general USACE facilities that are federally regulated as Generators or Permitted Treatment, Storage and Disposal Facilities (TSDF) shall:

(1) Comply with all Federal and state regulations.

(2) Comply with terms and conditions of permit.

(3) Comply with DOT requirements when shipping hazardous wastes offsite.

13-4. Records and Reports Federally, the record keeping and reporting requirements can be found as 40 CFR 262 Subpart D.

a. CESQG are exempted from all record keeping requirements under RCRA. It should be noted that DOT shipping papers are still required for hazardous wastes.

b. SQGs must maintain the following records: manifests, waste analysis, exception reports and any additional reports.


c. Generators and permitted TSDFS shall keep the following records: Manifests, waste analysis, exception reports, land disposal restriction notifications, biennial reports, state annual reports (as required) and any additional reports.

d. Section 3016 of the Resource Conservation and Recovery Act requires all Federal agencies to submit an inventory to the Environmental Protection Agency on a biennial basis of "facilities currently or formerly owned or operated at which hazardous waste has been treated, stored, or disposed of or has been disposed of at any time". Data calls from CECW-OA will be made biennially for these reports.

13-5. Good Management Practices. USACE facilities are encouraged to develop hazardous waste management plans for their facilities. These plans should serve to identify typical waste streams at the facility, satellite storage management requirements, and other management requirements during storage, transportation, treatment and disposal of hazardous wastes.

FOR THE COMMANDER:

6 APPENDIXES  
See Table of Contents



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